

DEQ

AGENCY USE ONLY

PERMIT NO.:

MTG010286

Date Rec'd.:

2.2.17

Amount Rec'd.:

0

Check No.:

0

Rec'd By:

R



Montana Department of

ENVIRONMENTAL QUALITY

WATER PROTECTION BUREAU

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FEB 02 2017

DEQ WATER QUALITY DIVISION

FORM
NOI

Notice of Intent (NOI) for Montana Pollution Discharge Elimination System Application for New and Existing Concentrated Animal Feeding Operations

The Application form is to be completed by the owner or operator of a Concentrated Animal Feeding Operation (CAFO) or Aquatic Animal Production Facility. Please read the attached instructions before completing this form. You must print or type legibly; forms that are not legible or are not complete will be returned. You must maintain a copy of the completed application form for your records.

Section A - Application Status (Check one):

- ☒ New No prior application submitted for this site.
- ☐ Resubmitted Permit Number: MTG _____
- ☐ Renewal Permit Number: MTG _____
- ☐ Modification Permit Number: MTG _____

Section B - Facility or Site Information (See instruction sheet.):

Site Name Cool Springs ColonySite Location SE 1/4, Sec 20-35N-9ENearest City or Town RudyardCounty HillLatitude 48.772523Longitude -110.583873Date Facility began operation? 2015Is this facility or site located on Indian Lands? ☐ Yes ☒ No

Section C - Applicant (Owner/Operator) Information:

Owner or Operator Name Peter J HoferMailing Address PO Box 246City, State, and Zip Code Rudyard, MT 59540Phone Number 1-406-355-4400Is the person listed above the owner? ☐ Yes ☒ NoStatus of Applicant (Check one) ☐ Federal ☐ State ☒ Private ☐ Public ☐ Other (specify) _____

COPY

ENTERED

FEB 09 2017

State
I.D.
2600

Section D - Existing or Pending Permits, Certifications, or Approvals: ☒ None

☐ MPDES _____ ☐ RCRA _____
☐ PSD (Air Emissions) _____ ☐ Other _____
☐ 404 Permit (dredge & fill) _____ ☐ Other _____

Section E – Standard Industrial Classification (SIC) Codes:

Provide at least one SIC code which best reflects the construction activity of project described in Section H.

Code	A. Primary	Code	B. Second
1	213	2	251
Code	C. Third	Code	D. Fourth
3	253	3	

Section F - Facility or Site Contact Person/Position:

Name and Title, or Position Title Peter J Hofer (Financial Manager)
Mailing Address Same as above
City, State, and Zip Code Same as above
Phone Number Same as above

Section G – Receiving Surface Waters(s):

Outfall/Discharge Locations: For each outfall, List latitude and longitude to the nearest second and the name of the receiving waters

Outfall Number	Latitude	Longitude	Receiving Surface Waters
001	48.760005	-110.580740	Un-named tributary to Little Sage Creek
002		-	
003			
004			
005			

Map: Attach a topographic map extending one mile beyond the property boundaries or the site activity identified in Section B depicting the facility or activity boundaries, major drainage patterns, and the receiving surface waters, stated above. Also identify the specific location of the production area, and land application area(s).

Is the receiving water on the 303(d) list for nutrients (nitrogen and/or phosphorus) ☐ Yes ☒ No

Section H – Concentration Animal Feeding Operation Characteristics

Waste Production, Storage and Disposal

Animal type	Number in Open Confinement	Number Housed Under Roof
<input type="checkbox"/> Mature Dairy Cows	4	
<input type="checkbox"/> Dairy Heifers		
<input type="checkbox"/> Veal Calves		
<input type="checkbox"/> Cattle (not dairy or veal)		
<input checked="" type="checkbox"/> Swine (55 lbs or over)		2800
<input checked="" type="checkbox"/> Swine (55 lbs or under)		1350
<input type="checkbox"/> Horses		
<input type="checkbox"/> Sheep or Lambs		
<input type="checkbox"/> Turkeys		1500
<input type="checkbox"/> Chickens (broilers)		800
<input type="checkbox"/> Chickens (layers)		300
<input type="checkbox"/> Ducks		600
<input type="checkbox"/> Other (Specify: _____)		
<input type="checkbox"/> Other (Specify: _____)		
<input type="checkbox"/> Other (Specify: _____)		

Manure, Litter and/or Wastewater Production and Use.

How much manure, litter, and process wastewater is generated annually by the facility?

Solid (tons): 114 Liquid/Slurry (gallons): 3,565,875

If land applied, how many acres of land under control of the permit applicant are available to apply the manure, litter, or process wastewater generated from the facility? (Note: Do not include setback distances in available acreage)

1456 Acres

How much manure, litter, and process wastewater is transferred to other persons per year? (estimated) Solid

(tons): none Liquid/Slurry (gallons): none

Were the containment structures built after February 2006? yes

yes ☒ Do the waste containment structures have 10 feet of separation between the pond bottom and any bedrock formations?

yes ☒ Do the waste containment structures have 4 feet of separation from the pond bottom and any ground water?

no ☒ Were any of the waste containment structures built within 500 feet of any existing well?

Type of Containment/Storage	Total Capacity	Units (gallons or tons)	Days of Storage
<input type="checkbox"/> Anaerobic Lagoon			
<input checked="" type="checkbox"/> Storage Pond #1	2,200,000	gallons	225
<input checked="" type="checkbox"/> Storage Pond #2	5,500,000	gallons	563
<input type="checkbox"/> Storage Pond #3			
<input type="checkbox"/> Storage Pond #4			
<input type="checkbox"/> Storage Pond #5			
<input type="checkbox"/> Above Ground Storage Tank			
<input type="checkbox"/> Below Ground Storage Tank #1			
<input type="checkbox"/> Below Ground Storage Tank #2			
<input checked="" type="checkbox"/> Underfloor Pits	1,490,000 g	gallons	153
<input checked="" type="checkbox"/> Roofed Storage Shed	65	tons	209
<input type="checkbox"/> Concrete Pad			
<input type="checkbox"/> Impervious Soil Pad			
<input checked="" type="checkbox"/> Other (Specify: Isolation Barn Pits)	119,000	gallons	12
<input type="checkbox"/> Other (Specify:)			

Physical Data for CAFO

Nutrient Management Plan

All Concentrated Animal Feeding Operations seeking permit coverage after July 31, 2007 are required to complete and implement a Nutrient Management (NMP). The NMP must be submitted to the Department using the form provided by the Department (Form NMP). Check the box below that applies and provide the required information. The NMP must be developed in accordance with ARM 17.30.1334 and implemented upon the effective date of permit coverage. (Check One)

- ☒ Does the facility have an NMP?
 Date NMP was developed: 1-31-17
 Date NMP was last modified: _____
- ☐ NMP has not been prepared; provide detailed explanation below

Section I – Supplemental Information

See Attached maps

Section J - CERTIFICATION

Permittee Information:

This Form NMP must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print)

Peter J Hofer

B. Title (Type or Print)

Financial Manager

C. Phone No.

355-4400

D. Signature

Peter J Hofer

E. Date Signed

2-1-17

The Department will not process this form until all of the requested information is supplied, and the appropriate fees are paid. Return this form (NOI) and the applicable fee to:

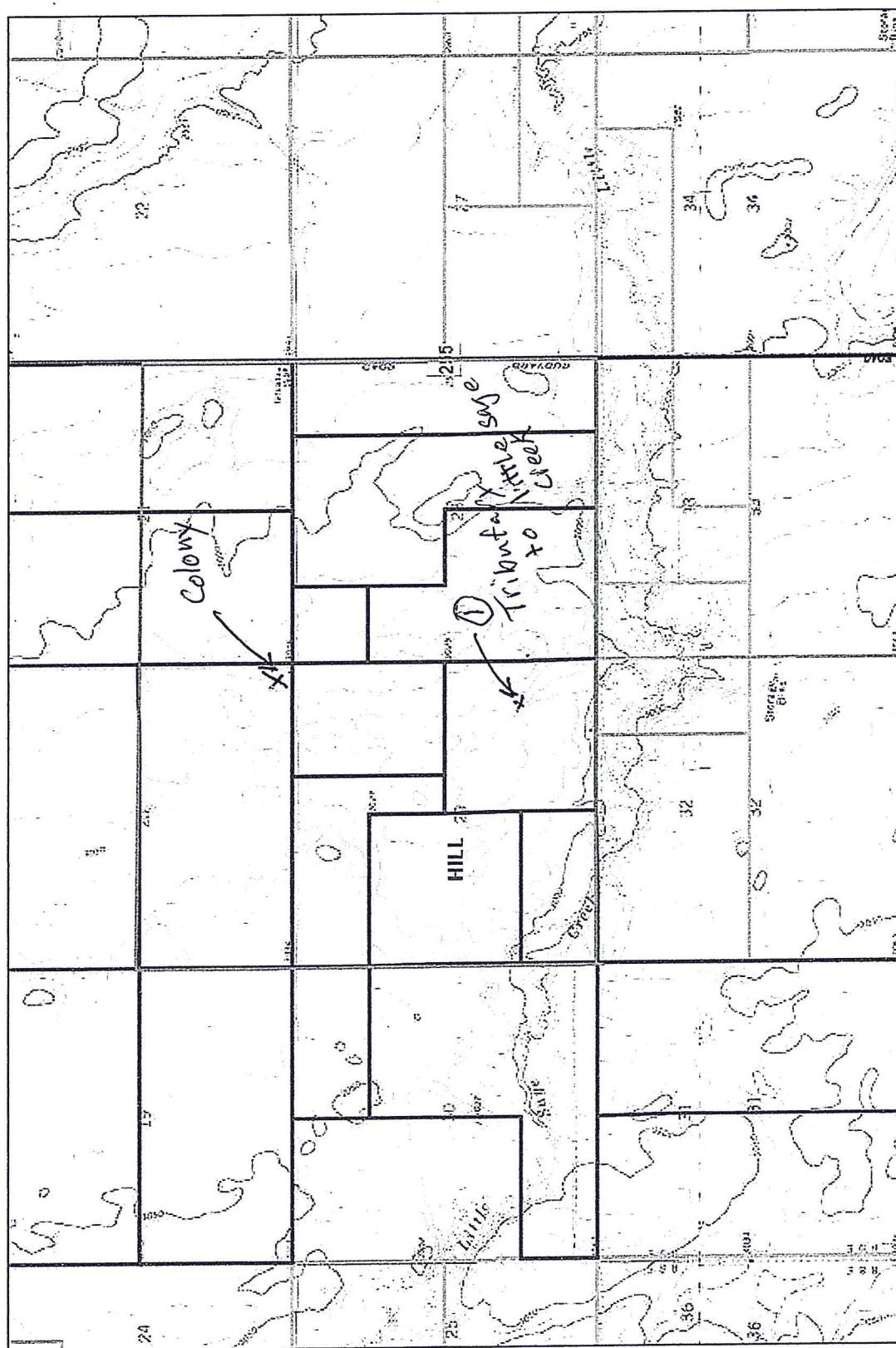
Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

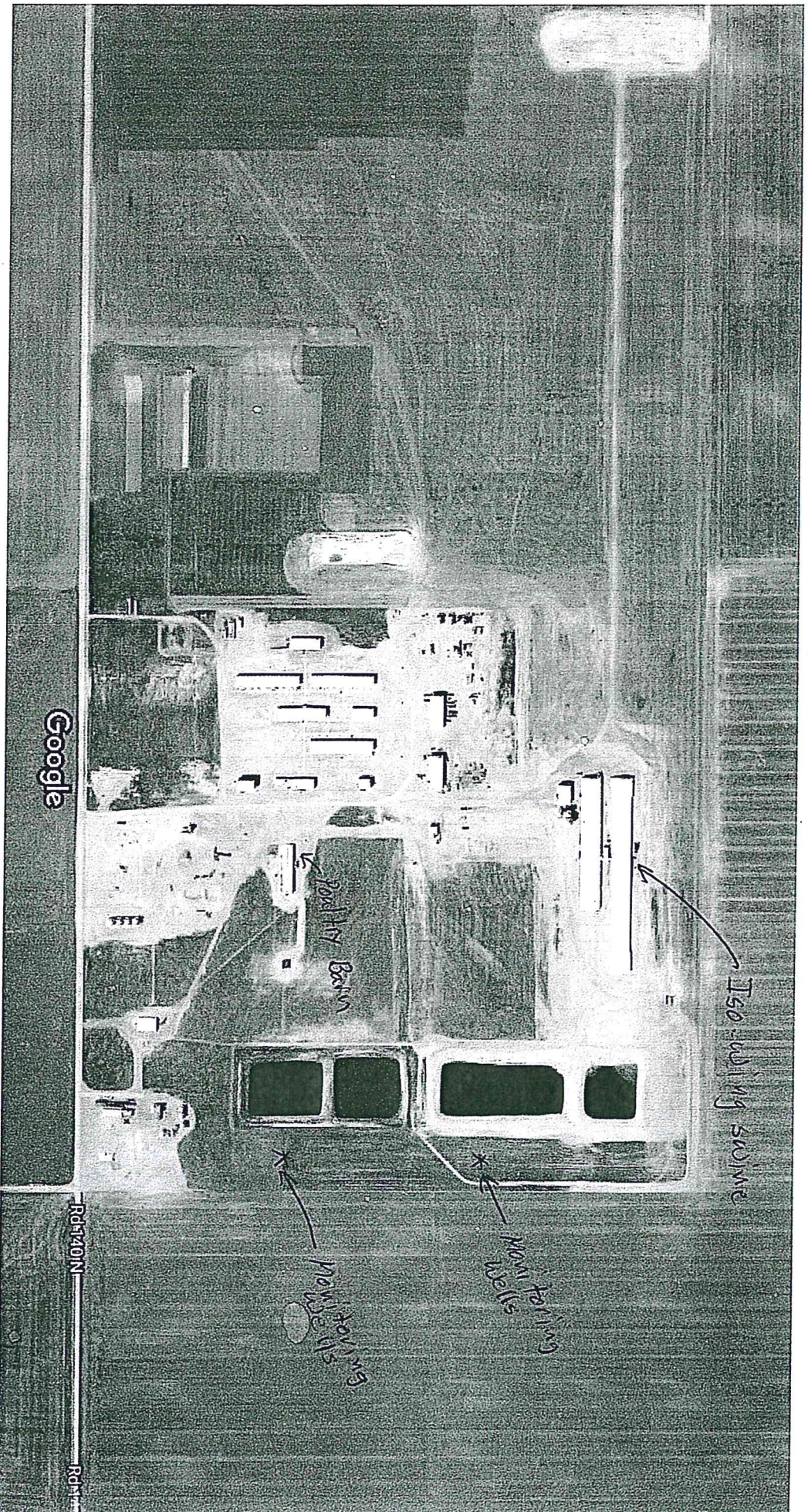
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DEQ WATER QUALITY DIVISION





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DEQ WATER QUALITY DIVISION

FORM
NMP

Nutrient Management Plan

READ THIS BEFORE COMPLETING FORM: Before completing this form (Form NMP), Concentrated Animal Feeding Operation (CAFO) operators need to read the General Permit, particularly Part IV.A. CAFO operators also need to read the "Instructions For filling out Form NMP," found at the back of this form. Form NMP is intended to help CAFO operators develop a site-specific Nutrient Management Plan, in compliance with Part IV.A of the General Permit and all applicable State rules and statutes. Your Nutrient Management Plan must be maintained at the site as required in Part III of the General Permit. Sections B and C on your Form NMP must state the information exactly the same way as it was stated on the most recently submitted version of your NOI-CAFO. Attach additional pages as necessary, indicating the corresponding section number on this NMP form. The 2013 General Permit, current fee schedule, and related forms are available from the Water Protection Bureau at (406) 444-3080 or <http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp>

Section A – NMP Status:

- ☒ New No prior NMP submitted for this site.
- ☐ Resubmitted Previous NMP found incomplete.
- ☐ Modification Change or update to existing NMP.
- ☐ New 2013 New 2013 version of NMP.

Section B – Facility Information:

Facility Name Cool Springs Colony

Facility Location SE 1/4, Sec 20 -35N- 9E

Nearest City of Town Rudyard County Hill

Section C – Applicant (Owner/Operator Information):

Owner or Operator Name Peter J Hofer

Mailing Address PO Box 246

City, State, and Zip code Rudyard, MT 59540

Facility Phone Number 1-406-355-4400

Email _____

Section D – NMP Minimum Elements:

1. Livestock Statistics		
Animal Type and number of animals	# of Days on Site (per year)	Annual Manure Production (tons, cu. yds. or gal)
1. Sows 2600	365	2,372,500gal
2. Boars 200	365	730,000gal
3. Nursery 1350 (12-15 lbs)	365	463,375 gal
4. Turkeys 1500	120	58.5 tons
5. Ducks 600	150	19.8 tons
6. layers 300	365	8 tons
7. Broilers 800	365	27 tons
8.		

Method used for estimating annual manure production:

DEQ 9 production tables adjusted for high efficiency

Liquid - 3,565,875 gallons

Solids - 113.3 tons

2. Manure Handling**a. Describe Manure handling at the facility:**

Liquid manure gravity flows to the Stage One pond then flows into Stage Two. Solid manure is scraped and applied as needed during summer and fall months. Solid waste is applied by spreader to fields before crop production or after harvest. Liquid manure is injected directly to the fields via drag hose and tool bar before crop production or after harvest.

b. Frequency of Manure Removal from confinement areas:

Injection and Solid waste applications occur before and after crop production (1st application 2017)

c. Is this manure temporarily stored in any location other than the confinement area? ☐ Yes ☒ No
If so then how and where?

d. Is manure stored on impervious surface? ☒ Yes ☐ No

If yes, describe type and characteristics of this surface:

All waste is stored in concrete pits, lined ponds, or on a concrete floored barn.

3. Waste Control Structures					
Waste Control Structures (name/type)	Length (ft.)	Width (ft.)	Depth (ft.)	Volume (cubic ft. or gallons)	Number of days of storage
1. Poultry Barn	80 ft	40 ft	.5 ft	65 tons	209
2. Hog Barn Pits	1370 ft	80 ft	2 ft	1,490,000g	153
3. Stage 1 pond	250 ft	250 ft	6 ft	2,200,000g	225
4. Stage 2 pond	490 ft	250 ft	6 ft	5,500,000g	563
5. Isolation Pits	80 ft	50 ft	4 ft	119,000g	12
6.					
7.					
8.					
9.					
10.					
11.					
12.					

What is the 24 hr. 25 yr. storm event at this facility 3 inches

Production area: 15 acres. Type of lot (dirt or paved): dirt/gravel

Area contributing drainage from outside CAFO that enters confinement areas and waste storage, conveyance, or treatment structures: < 20 acres.

What is the annual precipitation during the critical storage period March - Sept is 9 inches

How much freeboard do the pond(s) have 18 -24 inches

4. Disposal of Dead Animals.

Describe how dead animals are disposed of at this facility:

Animals are buried in a disposal pit and covered by soil within 48 hours of disposal.

5. Clean Water Diversion Practices

Describe how clean water is diverted from production area:

All Swine, and Poultry production is enclosed. Building run-off is directed away from waste storage facilities. No production areas are exposed to runoff. Clean water is diverted away from colony buildings via clean water diversions and gutters.

6. Prohibiting Animals and Wastes from Contact with State Waters

Describe how animals and wastes are prohibited from direct contact with state waters:

No confined animals are in contact with State waters. See above

Describe how Chemicals and other contaminants are handled on-site:

All chemicals are stored within a covered concrete storage shed outside of the manure production area.

7. Best Management Practice (BMPS)

Describe in detail all temporary, permanent and structural BMPS which will be used to control runoff of pollutants from facility's production area. Indicate the location of these measures. If BMPS are not installed include a schedule for implementation of each of these measures. Examples of BMP measures could include but are not limited to: constructing ditches, terraces,, and waterways above and open lot to divert clean water run on; installing gutters, downspouts and buried conduits to divert roof drainage; providing more roofed area; decreasing open lot surface area; repairing of adjusting water systems to minimize water wastage; using practical amounts of water for cooling purposes; recycling water if practical and applicable.

Production Area BMP's

All clean water is diverted away from waste storage areas by drainage. All Swine, and Poultry production is indoors. All liquid manure is stored in underfloor pits and ponds. Stored manure is removed and applied to fields in a timely manner based on agronomic rates. Poultry manure is only applied during summer and fall.

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's land production area. Indicate the location of these practices. If not already in use, include a schedule for implementation of each of these measures. Attached details and specifications may be used to supplement this description. Examples of BMP measures could include but are not limited to: maintaining setbacks from surface waters for manure applications; managing irrigation practices to prevent ponding of wastewater on land application sites;

never spray irrigating waste on to frozen ground: consulting with the Department prior to applying any liquid waste to frozen or snow-covered ground; applying wastes at agronomic rates.

Land Application BMP's

Liquid manure is applied by direct injection. A minimum of 100 feet is maintained for manure application set backs as needed. Grass filters are present along drainage ways. Solid manure is applied in the summer and fall before freeze up at agronomic rates. Liquid manure is injected and solid manure is incorporated during seeding.

Buffers	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Conservation Tillage	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Constructed Wetlands	<input type="checkbox"/> Yes <input type="checkbox"/> No	Grass Filter	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Infiltration Field	<input type="checkbox"/> Yes <input type="checkbox"/> No	Residue Management	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Set backs	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Terrace	<input type="checkbox"/> Yes <input type="checkbox"/> No

Other examples

8. Implementation, Operation, Maintenance and Record Keeping – Guidance

The permittee is required to develop guidance addressing implementation of NMP, proper operation and maintenance of the facility, and record keeping as described in Part 2 of the permit.

Has a guidance document been developed for the facility? ☒ Yes ☐ No

Certify the document address the following requirements:

Implementation of the NMP:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Facility operation and maintenance:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Record keeping and reporting	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample collection and analysis:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Manure transfer	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Provide name, date and location of most recent documentation:

MT DEQ Circular 9 Guidance Document (Colony)

MSU Extension service CAFO record keeping Sheets last updated December 2012. (Colony)

Agvise Laboratories 11/14/16 Soils. (Colony)

Manure samples will be taken in spring of 2017, before the first permit based applications.

If your answer to any of the above question is no, provide explanation:

All manure will be field applied within this Nutrient Management plan. No manure is transferred to a second party.

Section E – Land Application

Will manure be land applied to land either owned, rented, or leased by the owner or operator of the facility?

- ☒ Yes If yes, then the information requested in Section E must be provided.
☐ No If no, then provide an explanation of how animal waste at this facility are managed.

See attached plan map (poultry manure is applied by spreader, swine liquid by cultivator injection)

Photos and/or Maps

Attach an aerial photograph or map of the site where manure is to be applied. (Use multiple photos/maps if necessary to show required details.) The photo(s)/map(s) must be printed on no larger than an 11"X 17" piece of paper, and must clearly identify the following items:

- Individual field boundaries for all planned land application areas
- A name, number, letter or other means of identifying each individual land application field
- The location of any downgradient surface waters.
- The location of any downgradient open tile line intake structures
- The location of any downgradient sinkholes
- The location of any downgradient agricultural well heads
- The location of all conduits to surface waters
- The specific manure/waste handling or nutrient management restrictions associated with each land application field
- The soil type(s) present and their locations within the individual land application field(s)
- The location of buffers and setbacks around state surface waters, well heads, etc.

Land Application Equipment Calibration

Describe the type of equipment used to land apply wastes and the calibration procedures:

Drag hose injector system and a solid spreader. Flow Meter and DEQ 9 defined procedure.

Manure Sampling and Analysis Procedures

A representative manure sample will be analyzed a minimum of once annually for Total Nitrogen, and Total Phosphorus. Analysis results will be reported in lbs/ton or lbs/1,000 gal. Results of these analyses will be used in determining rates for manure, litter, and process wastewater.

Manure Sample collection will occur according to ARM 17.30.1334

Other (describe)

Manure will be sampled annually per DEQ-Circular 9 procedure and submitted to Agvise Labs

Soil Sampling and Analysis Procedures

Representative soil (composite) samples from the top 6 inches layer of soil for each field where manure will be applied must be analyzed for phosphorus content at least once every three years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater

Soil samples collection will occur according the methods in ARM 17.30.1334

Other (describe)

All fields receiving manure are annually soil sampled per DEQ-Circular-9 guidelines.

Phosphorus Risk Assessment

The permittee shall assess the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or

may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using Method A or Method B (below) to complete the assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained on-site at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

Method Used

Indicate which method will be used to determine phosphorus application:

Method A – Representative Soil Sample

Method B – Phosphorus Index

Method A – Representative Soil Sample

- Obtain one or more representative soil sample(s) from the field per 17.30.1334
- Have the sample analyzed for Phosphorus by a qualified lab. The “Olsen P test” must be used for the analysis, and the result must be reported in parts per million (ppm)
- Using the results of the Olsen P test, determine application basis according to the Table below.

Soil Test

Olsen P Soil Test Results (ppm)	Application Basis
<25.0	Nitrogen Needs of Crop
25.1 - 100.0	Phosphorus Needs of Crop
100.0 – 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application allowed

Method B – Phosphorus Index

- Complete a phosphorus Index according to the crop grown on each field. Complete table in Appendix A to calculate phosphorus index. For information on filling out specific sections in Appendix A, please refer to the method as described in Natural Resource Conservation Service (NRCS), Agronomy Technical Note MT-77 (rev3), January 2006.
- Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

Total Phosphorus

Total Phosphorus Index Value	Site Vulnerability to Phosphorus Loss
<11	Low
11-21	Medium
22-43	High
>43	Very High

- Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

Site Vulnerability to Phosphorus Loss	Application Basis
Low	Nitrogen Needs
Medium	Nitrogen Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

The applicant has 2 ways in which to report how manure or process wastewater application rates can be reported to DEQ.

1. Linear Approach. Expresses rates of application as pounds of nitrogen and phosphorus. CAFOs selecting the linear approach to address rates of application must include in the NMP submitted to the permitting authority the following information for each crop, field, and year covered by the NMP, which will be used by the permitting authority to establish site-specific permit terms:

- The maximum application rate (pounds/acre/year of nitrogen and phosphorus) from manure, litter, and process wastewater.
- The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field. [If a state does not have an N transport risk assessment, the NMP must document any basis for assuming that nitrogen will be fully used by crops.] The CAFO must specify any conservation practices used in calculating the risk rating.
- The crops to be planted or any other uses of a field such as pasture or fallow fields.
- The realistic annual yield goal for each crop or use identified for each field.
- The nitrogen and phosphorus recommendations from in ARM 17.30.1334 (technical standard) for each crop or use identified for each field.
- Credits for all residual nitrogen in each field that will be plant-available.
- Consideration of multi-year phosphorus application. For any field where nutrients are applied at a rate based on the crop phosphorus requirement, the NMP must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement.
- All other additions of plant available nitrogen and phosphorus (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen).
- The form and source of manure, litter, and process wastewater to be land-applied.
- The timing and method of land application. The NMP also must include storage capacities needed to ensure adequate storage that accommodates the timing indicated.
- The methodology that will be used to account for the amount of nitrogen and phosphorus in the manure, litter, and wastewater to be applied.
- Any other factors necessary to determine the maximum application rate identified in accordance with this Linear Approach.

2. Narrative Rate Approach. Expresses a narrative rate of application that results in the amount, in tons or gallons, of manure, litter, and process wastewater to be land applied. CAFOs selecting the narrative rate approach to address rates of application must include in the NMP submitted to the permitting authority the following information for each crop, field, and year covered by the NMP, which will be used by the permitting authority to establish site-specific permit terms:

- The maximum amounts of nitrogen and phosphorus that will be derived from all sources of nutrients (pounds/acre for each crop and field).
- The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field. The CAFO must specify any conservation practices used in calculating the risk rating.
- The crops to be planted in each field or any other uses of a field such as pasture or fallow fields, including alternative crops if applicable. Any alternative crops included in the NMP must be listed by field, in addition to the crops identified in the planned crop rotation for that field.
- The realistic annual yield goal for each crop or use identified for each field for each year, including any alternative crops identified.
- The nitrogen and phosphorus recommendations from *[the permitting authority to specify acceptable sources]* for each crop or use identified for each field, including any alternative crops identified.
- The methodology (including formulas, sources of data, protocols for making determination, etc.) and actual data that will be used to account for: (1) the results of soil tests required by Parts II.A.4.b and III.A.3.g of this

permit, (2) credits for all nitrogen in the field that will be plant- available, (3) the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied, (4) consideration of multi-year phosphorus application (for any field where nutrients are applied at a rate based on the crop phosphorus requirement, the methodology must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement), (5) all other additions of plant available nitrogen and phosphorus to the field (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen), (6) timing and method of land application, and (7) volatilization of nitrogen and mineralization of organic nitrogen.

- Any other factors necessary to determine the amounts of nitrogen and phosphorus to be applied in accordance with the Narrative Rate Approach.

- NMPs using the Narrative Rate Approach must also include the following projections, which will not be used by the permitting authority in establishing site-specific permit terms:

- i. Planned crop rotations for each field for the period of permit coverage.

- ii. Projected amount of manure, litter, or process wastewater to be applied.

- iii. Projected credits for all nitrogen in the field that will be plant-available.

- iv. Consideration of multi-year phosphorus application.

- v. Accounting for other additions of plant-available nitrogen and phosphorus to the field.

- vi. The predicted form, source, and method of application of manure, litter, and process wastewater for each crop

- If the receiving water is on the 303(d) list for nutrients then the narrative rate approach must be used.

- a. For the Linear Approach the permittee will complete the Nutrient Budget Worksheet, below, for the next 5 years to which manure or process waste water is or may be applied. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Nutrient Budget Worksheet

Field identification: **Section 20** Year: **2017** Crop: **Durum Wheat**

Expected Crop Yield: **50 Bushels/acre**

Phosphorus index results or Phosphorus application from soil test: **11 PPM P Soil test**

Method of Application: **liquid injection at agronomic rate**

When will application occur: **April 2017**

Nutrient Budget			Nitrogen-based Application	Phosphorus-based Application	Source of information
1		Crop Nutrient Needs, lbs/acre	165 lbs	24 lbs	EB161
2	(-)	Credits from previous legume crops, lbs/ac	67 lbs	NA	Soil Test N
3	(-)	Residuals from past manure production lbs/acre	NA	NA	First Application
4	(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	20 lbs	10	Starter
5	(-)	Nutrients supplied in irrigation water, lbs/acre	NA	NA	
6		= Additional Nutrients Needed, lbs/acre	78 lbs	14 lbs	EB 161
7		Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1000 gal (from manure test)	8 lbs/1000g	3 lbs/1000g	Example only
8	(x)	Nutrient Availability factor, for Phosphorus based application use 1.0	.9	1	NRCS DEQ-9
9		= Available Nutrients in Manure, lbs/ton or lbs/1000 gal	7.2 lbs/1000g	3 lbs/1000g	
10		Additional Nutrients needed, lbs/acre (calculated above)	78 lbs	14 lbs	
11	(/)	Available Nutrients in Manure, lbs/ton or lbs/1000 gal (calculated above)	7.2 lbs/1000g	3 lbs/1000g	
12		= Manure Application Rate, tons/acre or 1000 gal/acre	10,000g/acre	NA	(Nitrogen Based)

Comments:

This is an example of how agronomic rates will be calculated for Cool Springs Colony. The first liquid manure applications will occur in spring 2017. A manure analysis will be completed for manure sources prior to their 1st spring of 2017 applications. Ponds have not been emptied previously.

Section F - CERTIFICATION

Permittee Information: This form must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print)

Peter J Hofer

B. Title (Type or Print)

Financial Manager

C. Phone No.

355-4400

D. Signature

Peter J Hofer

E. Date Signed

2-1-17

The Department will not process this form until all of the requested information is supplied, and the appropriate fees are paid. Return this form and the applicable fee to:

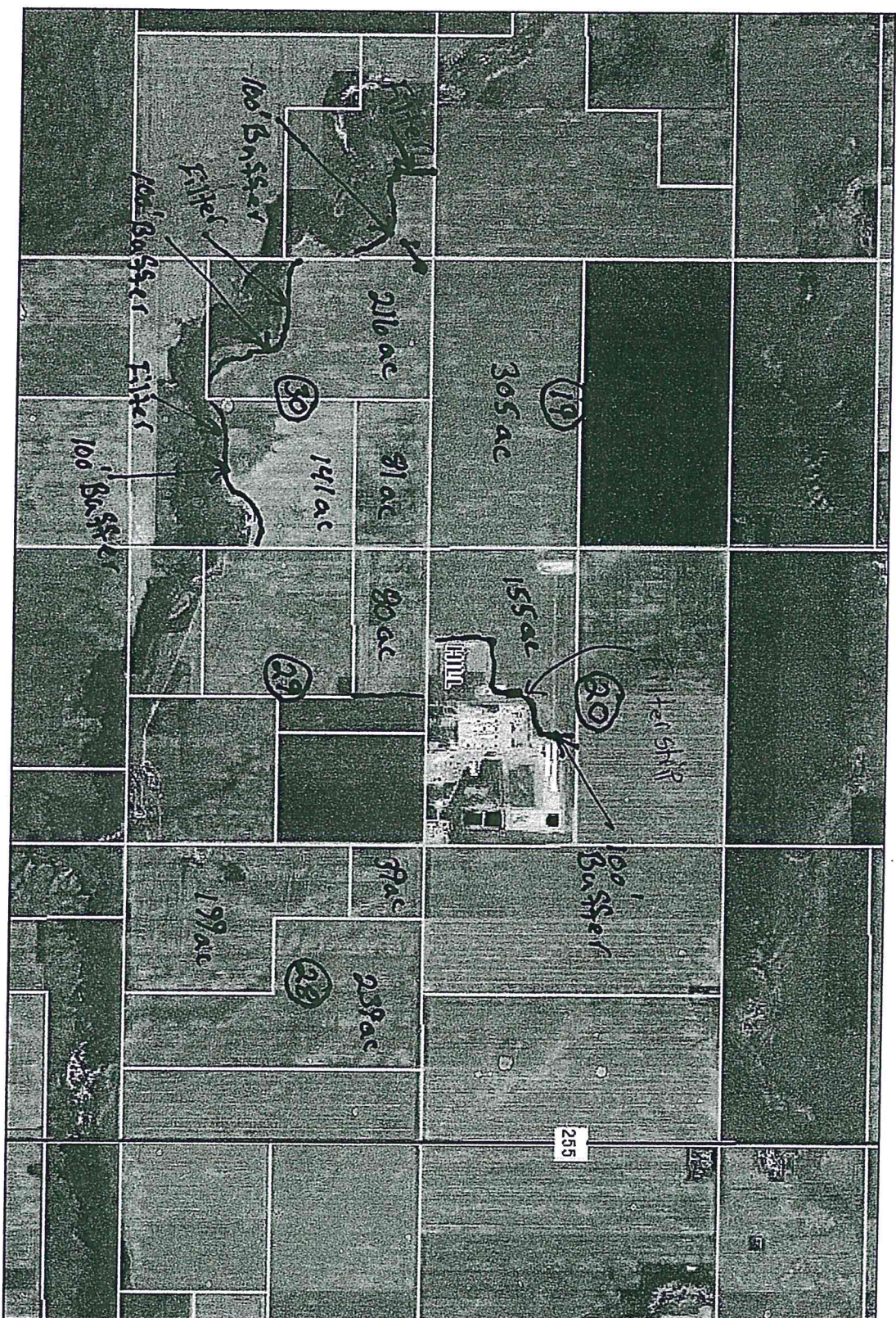
Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

RECEIVED

FEB 02 2017

DEQ WATER QUALITY DIVISION

Cool Springs Colony - NHP



35N-9E

See - 19 3052

- 20 155 a

-28 477 a

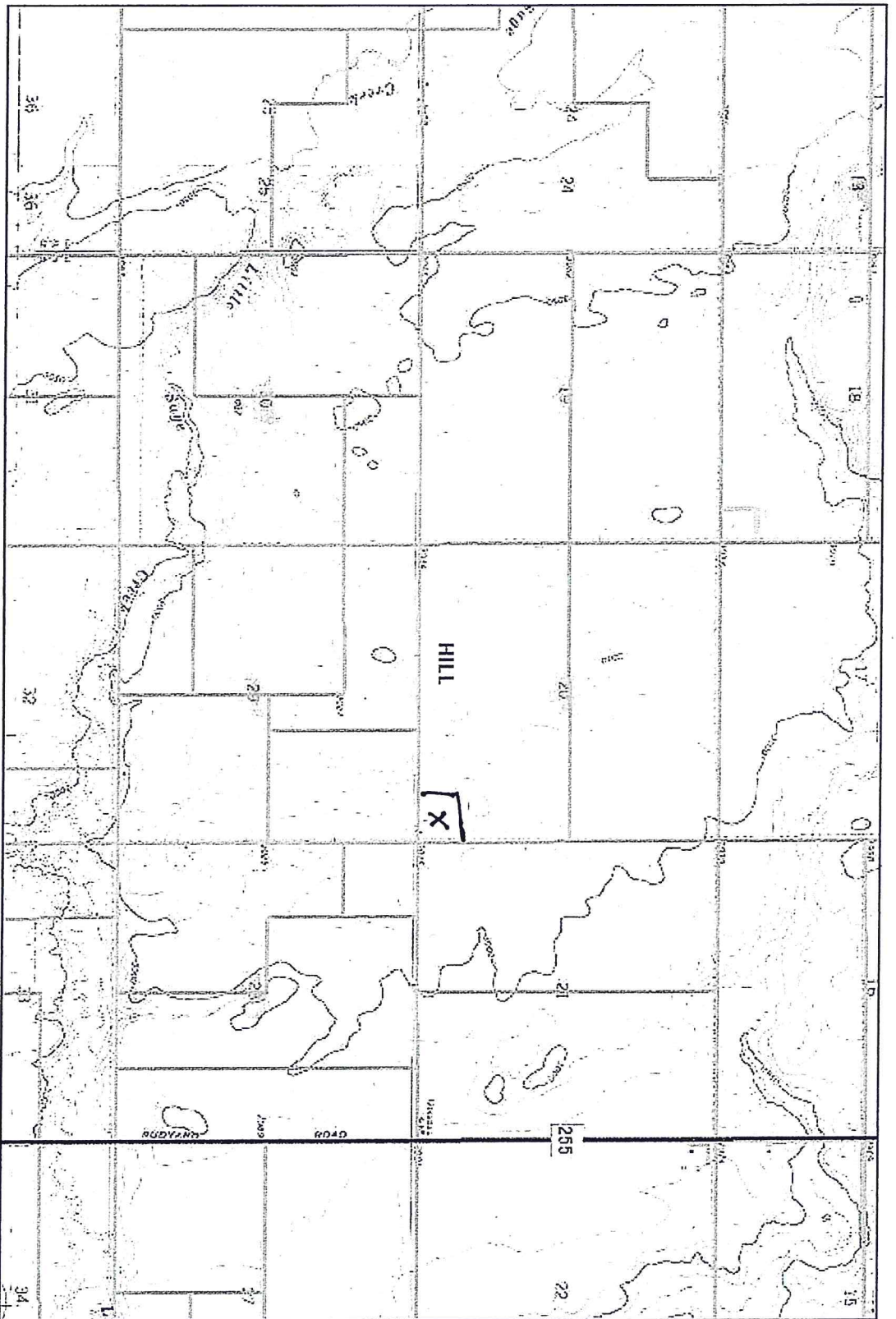
-29 80 ac

- 30 4/38 a

Total 1455a

Spreading will be set back 100 feet where indicated

Cool Springs Colony - NMIP





Cool Springs Colony - NMP

0 2,000 ft

Search

Map Unit Legend

Hill County, Montana (MT041)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
37A	Evanston loam, 0 to 2 percent slopes	20.9	0.5%
96B	Fortbenton fine sandy loam, 0 to 4 percent slopes	16.9	0.4%
224D	Hillion-Joplin loams, 8 to 15 percent slopes	104.8	2.5%
309A	Marvan complex, 0 to 2 percent slopes	1.2	0.0%
421C	Joplin-Hillion loams, 2 to 8 percent slopes	488.9	11.9%
503B	Telstad-Joplin loams, 0 to 4 percent slopes	2,658.6	64.6%
603A	Havre-Harleke clay loams, 0 to 2 percent slopes	172.1	4.2%
951B	Kenilworth-Fortbenton fine sandy loams, 0 to 4 percent slopes	79.4	1.9%
968C	Fortbenton-Hillion complex, 2 to 8 percent slopes	570.0	13.9%
Totals for Area of Interest		4,112.8	100.0%

Appendix A: Phosphorus Index Worksheet (Complete for each field and crop)

Field:	Crop:					Year:		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All fields 0-3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large spray on silty soils 8-15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	1	X 0.5	.5
Olson Soil Test P	-----	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	.5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2	X 1.0	2
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2	X 1.0	2
Distance to Concentrated Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	0 feet or application are directly into concentrated surface water flow areas.	2 1	X 1.0	2 1
Total Phosphorus Index Value:						9.5		

Cool Springs Colony Sec 20 - NMP

Appendix A: Phosphorus Index Worksheet (Complete for each field and crop)

Field:	Crop:					Year:		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All fields 0-3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large spray on silty soils 8-15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	1	X 0.5	.5
Olson Soil Test P	-----	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	2	X 0.5	1
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2	X 1.0	2
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2	X 1.0	2
Distance to Concentrated Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	0 feet or application are directly into concentrated surface water flow areas.	1	X 1.0	1
Total Phosphorus Index Value:						10.0		

Cool Springs Colony Sec 28 - NMP

Appendix A: Phosphorus Index Worksheet (Complete for each field and crop)

Field:	Crop:					Year:		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All fields 0-3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large spray on silty soils 8-15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	2	X 0.5	1
Olson Soil Test P	-----	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	2	X 0.5	1
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2	X 1.0	2
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2	X 1.0	2
Distance to Concentrated Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	0 feet or application are directly into concentrated surface water flow areas.	1	X 1.0	1
Total Phosphorus Index Value:						10.5		

Cool Springs Colony Sec 29 - NMP

Appendix A: Phosphorus Index Worksheet (Complete for each field and crop)

Field:	Crop:					Year:		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All fields 0-3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large spray on silty soils 8-15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	2	X 0.5	1
Olson Soil Test P	-----	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	2	X 0.5	1
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2	X 1.0	2
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2	X 1.0	2
Distance to Concentrated Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	0 feet or application are directly into concentrated surface water flow areas.	1	X 1.0	1
Total Phosphorus Index Value:						10.5		

Cool Springs Colony sec 30 - NMP

Appendix A: Phosphorus Index Worksheet (Complete for each field and crop)

Field:	Crop:					Year:		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All fields 0-3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large spray on silty soils 8-15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	1	X 0.5	.5
Olson Soil Test P	---	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	2	X 0.5	1
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2	X 1.0	2
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied to pasture or >3 months before crop emerges	1	X 1.0	1
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2	X 1.0	2
Distance to Concentrated Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	0 feet or application are directly into concentrated surface water flow areas.	2	X 1.0	2
Total Phosphorus Index Value:						11		

NMP

SOIL TEST REPORT



Ag Consulting

Cut Bank, MT

Soil Analysis by Agvise Laboratories

(http://www.agvise.com)

Northwood: (701) 587-6010

Benson: (320) 843-4109

FIELD ID Langel North

SAMPLE ID

FIELD NAME

COUNTY

TWP

RANGE

SECTION 19

QTR

ACRES 305

PREV. CROP Wheat-Winter

SUBMITTED FOR:

Cool Spring Colony
Box 246

Rudyard, MT

59427

SUBMITTED BY: CG2345

CG AG CONSULTING LLC

444 HWY 213

CUT BANK, MT

59427

REF # 1778257 BOX # 0

LAB # NW175266

Date Sampled

Date Received 11/14/2016

Date Reported 11/15/20

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice				
Nitrate	0-6"	7 lb/ac	****			Peas-Field										
						YIELD GOAL			YIELD GOAL			YIELD GOAL				
						40 BU										
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES				
						Band										
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION			
Phosphorus	Olsen	2 10 ppm	*****			N	23		N			N				
Potassium		304 ppm	*****			P ₂ O ₅	24	Band *	P ₂ O ₅			P ₂ O ₅				
Chloride	0-6"	7 lb/ac	***			K ₂ O	0		K ₂ O			K ₂ O				
	0-6"	6 lb/ac	*****			Cl	Not Available		Cl			Cl				
Sulfur						S	12	Band	S			S				
Boron		0.6 ppm	*****			B	0		B			B				
Zinc		0.38 ppm	*****			Zn	3	Band (Trial)	Zn			Zn				
Iron		7.2 ppm	*****			Fe	0		Fe			Fe				
Manganese		1.6 ppm	*****			Mn	0		Mn			Mn				
Copper		0.73 ppm	*****			Cu	0		Cu			Cu				
Magnesium		320 ppm	*****			Mg	0		Mg			Mg				
Calcium		5062 ppm	*****			Lime			Lime			Lime				
Sodium		16 ppm	**													
Org.Matter		1.8 %	*****													
Carbonate(CCE)		1.9 %	*****													
Sol. Salts	0-6"	0.23 mmho/cm	*****			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)							
									% Ca	% Mg	% K	% Na	% H			
						0-6" 8.1		28.8 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)			
									87.8	9.3	2.7	0.2				

General Comments: Texture is not estimated on high pH soils.

Crop 1: ** Chloride yield data is limited for this crop. Soil Nitrogen level is estimated at 20 lbs/acre. * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 28 K2O = 29 AGVISE Band guidelines will build P & K test level to the medium range over many years.

NMP

SOIL TEST REPORT



Ag Consulting
Cut Bank, MT

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

FIELD ID NW of Colony

SAMPLE ID

FIELD NAME

COUNTY

TWP

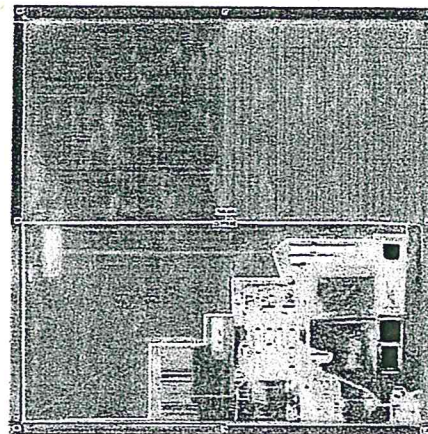
RANGE

SECTION

QTR

ACRES 154.5

PREV. CROP Fallow



SUBMITTED FOR:

Cool Spring Colony
Box 246

Rudyard, MT

59427

SUBMITTED BY: CG2345

CG AG CONSULTING LLC
444 HWY 213

CUT BANK, MT

59427

REF # 1778268 BOX # 0
LAB # NW175220

Date Sampled

Date Received 11/14/2016

Date Reported 11/15/20

Nutrient In The Soil		Interpretation		1st Crop Choice			2nd Crop Choice			3rd Crop Choice				
Nitrate	0-6" 6-24"	7 lb/ac 60 lb/ac					Durum							
			*****				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24"	67 lb/ac					50 BU 3.3							
							SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
							Band							
							LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
	Olsen	11 ppm	*****				N	98 Customized	N		N			
Phosphorus							P ₂ O ₅	24 Band *	P ₂ O ₅		P ₂ O ₅			
Potassium		236 ppm	*****				K ₂ O	10 Band (Starter)*	K ₂ O		K ₂ O			
Chloride	0-24"	16 lb/ac	*****				Cl	24 Broadcast	Cl		Cl			
	0-6" 6-24"	8 lb/ac 36 lb/ac	*****				S	9 Band (Trial)	S		S			
Sulfur							B	0	B		B			
Boron		0.6 ppm	*****				Zn	0	Zn		Zn			
Zinc		0.28 ppm	*****				Fe	0	Fe		Fe			
Iron		9.8 ppm	*****				Mn	0	Mn		Mn			
Manganese		1.9 ppm	*****				Cu	1 Band (Trial)	Cu		Cu			
Copper		0.76 ppm	*****				Mg	0	Mg		Mg			
Magnesium		353 ppm	*****				Lime		Lime		Lime			
Calcium		4850 ppm	*****											
Sodium		13 ppm	**											
Org. Matter		1.6 %	*****											
Carbonate(CCE)		2.2 %	*****											
	0-6" 6-24"	0.18 mmho/cm 0.21 mmho/cm	**** *****				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
										% Ca	% Mg	% K	% Na	% H
							0-6" 8.0 6-24" 8.4		27.9 meq	(65-75) 87.1	(15-20) 10.6	(1-7) 2.2	(0-5) 0.2	(0-5)
Sol. Salts														

General Comments: Texture is not estimated on high pH soils.

Crop 1: The nitrogen guideline for this recommendation has been customized by the submitter. 52 lbs of 0-0-60 = 24 lbs of Chloride" * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 31 K2O = 19 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

NMP



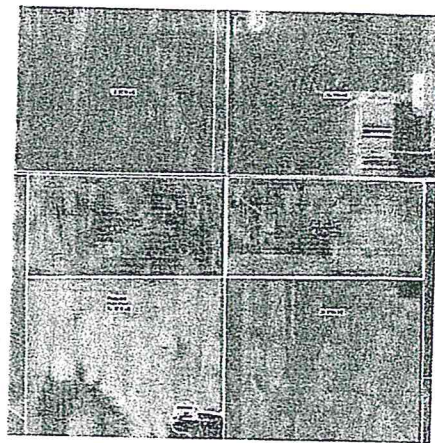
Ag Consulting

Cut Bank, MT

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID 80's East & West
SAMPLE ID
FIELD NAME
COUNTY
TWP 29-30 RANGE
SECTION 30 QTR ACRES 0
PREV. CROP Chickpeas +10



SUBMITTED FOR:
Cool Spring Colony
Box 246

Rudyard, MT

59427

SUBMITTED BY: CG2345
CG AG CONSULTING LLC
444 HWY 213
CUT BANK, MT 59427

REF # 1778267 BOX # 0
LAB # NW175264

Date Sampled

Date Received 11/14/2016

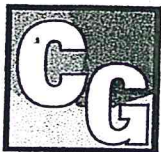
Date Reported 11/15/20

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
Nitrate	0-6"	5 lb/ac	Canola-bu					
	6-24"	39 lb/ac	YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24"	44 lb/ac	40 BU 3.9					
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
Phosphorus	Olsen	12 ppm	Band					
			LB/ACRE APPLICATION		LB/ACRE APPLICATION		LB/ACRE APPLICATION	
			N	102 Customized	N		N	
			P ₂ O ₅	26 Band *	P ₂ O ₅		P ₂ O ₅	
Potassium		243 ppm						
Chloride	0-24"	32 lb/ac						
Sulfur	0-6"	10 lb/ac						
	6-24"	150 lb/ac						
Boron		0.6 ppm						
Zinc		0.22 ppm						
Iron		8.7 ppm						
Manganese		1.8 ppm						
Copper		0.66 ppm						
Magnesium		368 ppm						
Calcium		5033 ppm						
Sodium		23 ppm						
Org.Matter		1.9 %						
Carbonate(CCE)		2.6 %						
Sol. Salts	0-6"	0.21 mmho/cm						
	6-24"	0.38 mmho/cm						
			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
			Buffer pH				% Ca	% Mg
							% K	% Na
							% H	
			0-6" 8.0		29.0 meq		(65-75)	(15-20)
			6-24" 8.3				86.9	10.6
							(1-7)	(0-5)
							0.3	(0-5)

General Comments: Texture is not estimated on high pH soils.

Crop 1: ** Chloride yield data is limited for this crop. The nitrogen guideline for this recommendation has been customized by the submitter. * Caution: Seed Place fertilizer Can Cause Injury * Nitrogen is credited 10 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 36 K20 = 18 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

NMP

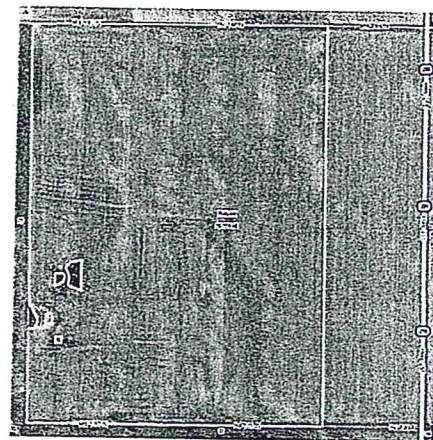


Ag Consulting
Cut Bank, MT

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID SE of Colony
SAMPLE ID
FIELD NAME
COUNTY Hill
TWP 35N RANGE 9E
SECTION 28 QTR ACRES 477.7
PREV. CROP Barley-Malting



SUBMITTED FOR:

Cool Spring Colony
Box 246

Rudyard, MT

59427

SUBMITTED BY: CG2345

CG AG CONSULTING LLC
444 HWY 213

CUT BANK, MT

59427

REF # 1778274 BOX # 0
LAB # NW175271

Date Sampled

Date Received 11/14/2016

Date Reported 11/15/20

Nutrient In The Soil		Interpretation		1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Nitrate	0-6"	4 lb/ac	**			Lentils					
						YIELD GOAL	YIELD GOAL	YIELD GOAL			
						1800 LBS					
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES			
						Band					
					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Olsen	L	8 ppm	*****			N	26	N		N	
Phosphorus	M	227 ppm	*****			P ₂ O ₅	18	P ₂ O ₅		P ₂ O ₅	
Potassium						K ₂ O	0	K ₂ O		K ₂ O	
0-6"	L	3 lb/ac	*			Cl		Cl		Cl	
Chloride											
0-6"	L	10 lb/ac	*****								
Sulfur											
Boron											
Zinc											
Iron											
Manganese											
Copper											
Magnesium											
Calcium											
Sodium											
Org.Matter											
Carbonate(CCE)											
0-6"	0.24 mmho/cm		*****								
Sol. Salts											

Nutrient In The Soil		Interpretation		1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Nitrate	0-6"	4 lb/ac	**			Lentils					
						YIELD GOAL	YIELD GOAL	YIELD GOAL			
						1800 LBS					
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES			
						Band					
					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Olsen	L	8 ppm	*****			N	26	N		N	
Phosphorus	M	227 ppm	*****			P ₂ O ₅	18	P ₂ O ₅		P ₂ O ₅	
Potassium						K ₂ O	0	K ₂ O		K ₂ O	
0-6"	L	3 lb/ac	*			Cl		Cl		Cl	
Chloride											
0-6"	L	10 lb/ac	*****								
Sulfur											
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Zinc											
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Sodium											
Org.Matter											
Carbonate(CCE)											
0-6"	0.24 mmho/cm		*****								
Sol. Salts											

Nutrient In The Soil		Interpretation		1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
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						YIELD GOAL	YIELD GOAL	YIELD GOAL			
						1800 LBS					
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES			
						Band					
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Phosphorus	M	227 ppm	*****			P ₂ O ₅	18	P ₂ O ₅		P ₂ O ₅	
Potassium						K ₂ O	0	K ₂ O		K ₂ O	
0-6"	L	3 lb/ac	*			Cl		Cl		Cl	
Chloride											
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Sulfur											
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Zinc											
Iron											
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Magnesium											
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Org.Matter											
Carbonate(CCE)											
0-6"	0.24 mmho/cm		*****								
Sol. Salts											

Nutrient In The Soil		Interpretation		1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Nitrate	0-6"	4 lb/ac	**			Lentils					
						YIELD GOAL	YIELD GOAL	YIELD GOAL			
						1800 LBS					
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES			
						Band					
					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
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Phosphorus	M	227 ppm	*****			P ₂ O ₅	18	P ₂ O ₅		P ₂ O ₅	
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0-6"	L	3 lb/ac	*			Cl		Cl		Cl	
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Nutrient In The Soil		Interpretation		1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Nitrate	0-6"	4 lb/ac	**			Lentils					
						YIELD GOAL	YIELD GOAL	YIELD GOAL			
						1800 LBS					
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						Band					
					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Olsen	L	8 ppm	*****			N	26	N		N	
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0-6"	L	3 lb/ac	*			Cl		Cl		Cl	
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Nutrient In The Soil		Interpretation		1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Nitrate	0-6"	4 lb/ac	**			Lentils					
						YIELD GOAL	YIELD GOAL	YIELD GOAL			
						1800 LBS					
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0-6"	L	3 lb/ac	*			Cl		Cl		Cl	
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Potassium						K ₂ O	0	K ₂ O		K ₂ O	
0-6"	L	3 lb/ac	*			Cl		Cl		Cl	
Chloride											
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Sulfur											
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0-6"	0.24 mmho/cm		*****								
Sol. Salts											

Nutrient In The Soil		Interpretation		1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
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						YIELD GOAL	YIELD GOAL	YIELD GOAL			
						1800 LBS					
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES			
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0-6"	L	3 lb/ac	*			Cl		Cl		Cl	
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Boron											
Zinc											
Iron											
Manganese											
Copper											
Magnesium											
Calcium											
Sodium											
Org.Matter											

General Comments: Texture is not estimated on high pH soils.

Crop 1: ** Chloride yield data is limited for this crop. Soil Nitrogen level is estimated at 20 lbs/acre. * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 25 K2O = 32 AGVISE Band guidelines will build P & K test level to the medium range over many years.